

What is claimed is:

1. A system for processing a workpiece, comprising:

a plurality of workpiece processors, with at least one of the workpiece processors comprising:

5 a first rotor including a plurality of alignment pins;

a second rotor including one or more receiving surfaces for receiving the alignment pins, with the first and second rotors forming a workpiece processing chamber when the alignment pins are engaged with the second rotor; and

10 a robot moveable between the workpiece processors for loading and unloading the workpiece into and out of one or more of the processors.

2. The system of claim 1 wherein each of the alignment pins includes a tapered leading end, and wherein the receiving surface comprises a tapered opening for receiving the tapered leading ends of the alignment pins.

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3. The system of claim 1 wherein the alignment pins are positioned at least partially around a periphery of the first rotor such that an inner surface of each of the

alignment pins contacts or closely contains an edge of the workpiece to align the workpiece within the processing chamber.

4. The system of claim 1 further comprising a plurality of support pins on at least
5 one of the first rotor and the second rotor for contacting at least one of an upper surface and a lower surface of a workpiece located in the processing chamber.

5. The system of claim 4 wherein the support pins are positioned to contact the workpiece at locations outside of a fluid path used for processing an edge of the
10 workpiece.

6. The system of claim 5 further comprising a drain groove in the first rotor, and wherein the support pins are positioned at least 3 mm radially inwardly from an outer edge of the drain groove.

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7. The system of claim 1 wherein the receiving surface on the second rotor comprises a plurality of holes in the lower rotor.

8. The system of claim 1 further comprising a plurality of horizontally oriented weep holes in the first rotor for removing processing fluid from the processing chamber.

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9. The system of claim 8 wherein the first rotor is an upper rotor, on top of the second rotor.

10. The system of claim 1 wherein the receiving surface comprises a tapered wall
10 on the second rotor.

11. The system of claim 1 further comprising a fluid applicator in the first rotor for delivering a processing fluid to a central region of the workpiece.

15 12. The system of claim 11 wherein the fluid applicator comprises a spray nozzle.

13. The system of claim 1 further comprising a fluid delivery path extending through at least one of the first rotor and the second rotor and terminating adjacent a circumferential outer edge of the rotor.

5 14. A system for processing a workpiece, comprising:

a plurality of workpiece processors, with at least one of the workpiece processors comprising:

a first rotor;

10 a second rotor engageable with the first rotor to form a workpiece processing chamber;

a fluid applicator for delivering a processing fluid to a central portion of a workpiece located in the processing chamber;

a substantially annular opening around an outer periphery of the fluid applicator;

15 a purge gas source for delivering a purge gas through the annular opening into the processing chamber; and

a robot moveable between the workpiece processors for loading and unloading the workpiece into and out of one or more of the processors.

15. The system of claim 14 further including a fluid delivery tube within the fluid applicator and terminating flush with a lower end of the fluid applicator.

16. The system of claim 14 further comprising a plurality of alignment pins on the first rotor for engaging the second rotor to align the workpiece within the processing chamber.

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17. A system for processing a workpiece, comprising:

a plurality of workpiece processors, with at least one of the workpiece processors comprising:

a first rotor;

15 a second rotor engageable with the first rotor to form a workpiece processing chamber;

a shield plate between the first and second rotors for directing the first processing fluid to the edge of the workpiece; and

a robot moveable between the workpiece processors for loading and unloading the workpiece into and out of one or more of the processors.

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18. The system of claim 17 further comprising a fluid applicator for delivering a processing fluid onto the shield plate.

19. The system of claim 17 further comprising a purge gas source for supplying a
10 purge gas through a central opening in the shield plate.

20. A system for processing a workpiece, comprising:

a plurality of workpiece processors, with at least one of the workpiece processors including:

15 a first rotor;

a second rotor engageable with the first rotor to form a workpiece processing chamber;

a process fluid supply line in the second rotor having an outlet adjacent to an outside surface of the process chamber, for supplying a process fluid
5 directly to an edge area of a workpiece, when a workpiece is placed into the processor; and

a robot moveable between the processors.

21. The system of claim 17 further comprising a plurality of support pins on the first rotor for contacting an upper surface of the workpiece, with the support pins
10 positioned to contact the upper surface of the workpiece at locations outside of a fluid path of the first processing fluid.

22. The system of claim 21 further including a drain groove in the first rotor and wherein the support pins are positioned radially inwardly from an outer edge of the
15 drain groove by at least 2 mm.

23. A system for processing a workpiece, comprising:

a plurality of workpiece processors, with at least one of the workpiece processors comprising:

a first rotor including an alignment means;

a second rotor including a receiving means for receiving the alignment
5 means, with the first and second rotors forming a workpiece processing chamber when the alignment means is engaged with the receiving means; and

a robot moveable between the workpiece processors for loading and unloading the workpiece into and out of one or more of the processors.

10 24. The system of claim 23 further comprising a first fluid delivery means for delivering a first processing fluid to an upper surface of the workpiece, and a second fluid delivery means for delivering a second processing fluid to an edge of the workpiece.